

CLAIMS

1. A method of processing a surface of a nitride semiconductor crystal,
wherein
5 a surface of a nitride semiconductor crystal (11) is brought into contact with a
liquid containing at least Na, Li or Ca as a processing solution (15).
2. The method of processing a surface of a nitride semiconductor crystal
according to claim 1, wherein
10 said processing solution (15) is a liquid containing at least Na and has an Na
content of 5-95 mol%.
3. The method of processing a surface of a nitride semiconductor crystal
according to claim 1, wherein
said processing solution (15) is a liquid containing at least Li and has an Li
content of 5-100 mol%.
- 15 4. The method of processing a surface of a nitride semiconductor crystal
according to claim 1, wherein
said nitride semiconductor crystal (11) is an $\text{Al}_x\text{Ga}_y\text{In}_{1-x-y}\text{N}$ semiconductor
crystal ($0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq x + y \leq 1$).
- 20 5. A nitride semiconductor crystal having a maximum depth of a surface
scratch of at most $0.01 \mu\text{m}$ and obtained with a method of processing a surface of a
nitride semiconductor crystal wherein a surface of a nitride semiconductor crystal (11) is
brought into contact with a liquid containing at least Na, Li or Ca as a processing
solution (15).
- 25 6. The nitride semiconductor crystal according to claim 5, wherein
said processing solution (15) is a liquid containing at least Na and has an Na
content of 5-95 mol%.
7. The nitride semiconductor crystal according to claim 5, wherein
said processing solution (15) is a liquid containing at least Li and has an Li

content of 5-100 mol%.

8. The nitride semiconductor crystal according to claim 5, wherein said nitride semiconductor crystal (11) is an $\text{Al}_x\text{Ga}_y\text{In}_{1-x-y}\text{N}$ semiconductor crystal ($0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq x + y \leq 1$).

5 9. A nitride semiconductor crystal having an average thickness of a damaged layer of at most 2 μm and obtained with a method of processing a surface of a nitride semiconductor crystal wherein a surface of a nitride semiconductor crystal (11) is brought into contact with a liquid containing at least Na, Li or Ca as a processing solution (15).

10 10. The nitride semiconductor crystal according to claim 9, wherein said processing solution (15) is a liquid containing at least Na and has an Na content of 5-95 mol%.

11. The nitride semiconductor crystal according to claim 9, wherein said processing solution (15) is a liquid containing at least Li and has an Li content of 5-100 mol%.

15 12. The nitride semiconductor crystal according to claim 9, wherein said nitride semiconductor crystal (11) is an $\text{Al}_x\text{Ga}_y\text{In}_{1-x-y}\text{N}$ semiconductor crystal ($0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq x + y \leq 1$).